

TOWN OF WELLESLEY



MASSACHUSETTS

## **SUSTAINABLE ENERGY COMMITTEE**

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Katy Gibson  
Steven Gusmini  
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### **SUSTAINABLE ENERGY COMMITTEE**

Town Meeting established the Sustainable Energy Committee (SEC) in 2010, to lead efforts to accomplish the goal adopted at the 2009 Annual Town Meeting: to reduce Town-wide greenhouse gas emissions 10% below 2007 levels by 2013, to monitor and report progress toward that goal, and to propose further goals for emissions reductions to Town Meeting. The 2014 Annual Town Meeting adopted the SEC proposal to establish a new goal to reduce Town-wide emissions 25% below 2007 levels by 2020.

The SEC has seven appointed members, with staggered terms of three years. The Board of Selectmen (BOS), Municipal Light Plant (MLP), and School Committee each appoint one board member, officer, official, or paid employee. The BOS appoints the remaining four members from residents or others with relevant interests and expertise. Members during Fiscal Year 2017 were: Ellen Korpi (Chair, Selectmen appointee) Michael D'Ortenzio (Vice Chair, School Committee representative), Scott Bender (Selectmen appointee), Ellen Gibbs (Selectmen representative), Katy Gibson (MLP representative), Laura Olton (Selectmen appointee), and Patrick Willoughby from Wellesley College (Selectmen appointee). Patrick Willoughby resigned from the SEC shortly before the close of the fiscal year. Steve Gusmini from Babson College (Selectmen appointee) assumed Patrick's seat. The SEC welcomes Steven and is extremely grateful for Patrick's many, valuable contributions.

### **Measurement of 2016 Emissions and Trends**

Each year the SEC, together with the MLP, calculates the Town's greenhouse gas (GHG) emissions and compares these emissions to those of previous years. Wellesley's emissions, also known as its "carbon footprint," are calculated from a variety of inputs, some actual and some estimated. The carbon

footprint is based on actual records of electrical and natural gas use by municipal entities, colleges, households, and businesses. The footprint is also based on estimates of heating oil consumption, fuel efficiency in the transportation sector, and conversion factors that translate energy use into GHG emissions. GHG emissions are calculated using ClearPath software made available through the International Council for Local Environmental Initiatives (ICLEI).

As reflected in Table 1, total emissions declined 2.5% in 2016, compared with 2015, and 12.8% compared with 2007, the base year. The 2.5% decline in total emissions is more than double the decline in emissions between 2014 and 2015. However, as discussed below, that decrease occurred during an unusually warm winter. Overall, emissions are declining, but not fast enough to achieve our 2020 goal unless the pace accelerates.

Greenhouse Gas Emissions (eCO <sub>2</sub> ) in metric tons						
				2015 - 2016		2007 - 2016
	Share of Total	2016	2015	Percent	2007	Percent
Electricity/Natural Gas/Fuel Oil	2016 Emissions	Emissions	Emissions	Change	Emissions	Change
Residential	29.7%	105,879	112,341	-5.8%	132,862	-20.3%
Commercial	13.3%	47,406	48,457	-2.2%	57,922	-18.2%
Colleges	10.9%	38,970	39,250	-0.7%	45,886	-15.1%
Municipal	2.0%	6,994	7,816	-10.5%	9,287	-24.7%
<b>Building Subtotal</b>	<b>56.0%</b>	<b>199,248</b>	<b>207,863</b>	<b>-4.1%</b>	<b>245,957</b>	<b>-19.0%</b>
Waste	0.5%	1,853	1,756	5.5%	2,027	-8.6%
Gas/Diesel	43.5%	155,001	153,502	-0.3%	160,468	-3.4%
<b>Total Emissions</b>	<b>100.0%</b>	<b>356,102</b>	<b>365,121</b>	<b>-2.5%</b>	<b>408,452</b>	<b>-12.8%</b>

Consistent with years past, the decline in emissions from the building sector (4.1% since 2015 and 19% since 2007) far outpaced the reduction in the transportation sector (0.3% since 2015 and 3.4% since 2007). The building sector is the source of 56% of total emissions in 2016 while transportation accounts for 44% of total emissions. Emissions from decaying waste account for less than 1% of the total.

Emissions trends across many energy use categories in 2016 continue to tell, essentially, the same story as in prior years. However, there were notably larger percentage decreases in residential and municipal energy use between 2015 and 2016, than in the previous year. The 10.5% decrease in municipal emissions is due largely to a decrease in metered natural gas used to heat Town buildings. This decrease likely reflects the warmer winter temperatures (e.g., fewer number of heating degree days, HDD) in 2016. The Facilities Maintenance Department's (FMD's) analysis suggests that, when normalized for HDD, natural gas use actually increased slightly between 2015 and 2016. We expect that the 5.8% decrease in residential energy use between 2015 and 2016 similarly reflects the decrease in heating degree days in 2016. The percentage change in commercial and college emissions for 2016 is consistent with the change observed in 2015. In 2016, total estimated emissions from electricity, natural gas, and fuel oil used to heat, cool, light and power the appliances and electronics in Wellesley homes, businesses, colleges and municipal buildings, as well as to light our streets and power our water treatment facilities, declined 4.1% from the prior year.

The waste sector saw a 5.5% increase in emissions between 2015 and 2016. This percentage change exceeds the 3.7% increase in emissions between 2014 and 2015. Wellesley's Recycling and Disposal Facility (RDF) estimates that the increasing emissions in this sector are due, largely, to the disposal of waste from home cleanouts associated with the large number of demolitions and renovations.

### **Committee Activities in Fiscal Year 2017**

Over the past year, and as outlined below, the SEC led and contributed to a number of initiatives aimed at reducing the Town's carbon footprint.

The SEC works with boards and staff members throughout the Town of Wellesley and with Wellesley Public Schools. SEC's programs also involve significant participation by other groups with common interests. To connect numerous, environmentally-interested groups across Town, the SEC facilitates "Wellesley's Green Collaborative." The Collaborative consists of nearly 30 entities including grassroots, climate-action groups, houses of faith, land conservation activists, civic organizations, and garden clubs. The Collaborative meets several times per year to discuss sustainability issues relevant to Wellesley and to hear from a variety of speakers.

**Green Communities** - The SEC is working with the Board of Selectmen, the Planning Department, the Planning Board, the Municipal Light Plant, the Facilities Maintenance Department, the Department of Public Works (DPW), and other Town departments, boards, and committees to take the steps necessary for Wellesley to earn the Department of Energy Resources' (DOER's) Green Community designation. Over 64% of Massachusetts residents live in a Green Community and the DOER's Green Communities Program to date has awarded more than \$65 million in grant funding to cities and towns for renewable energy and energy efficiency projects. To fulfill one of the five criteria required to become a Green Community, Town Meeting approved an amendment to the Zoning Map and the Zoning Bylaws of the Town of Wellesley by adding a largescale solar overlay district to one parcel of land at the Route 9/Route128 cloverleaf, owned and controlled by the Massachusetts Department of Transportation (MassDOT). The SEC is also working with relevant departments on Criteria 3 and 4: a five-year municipal Energy Reduction Plan and a municipal Fuel-efficient Vehicle Purchase Policy, respectively. Wellesley already meets the remaining two criteria for Green Communities: adoption of the Stretch Building Code and an expedited permitting process for the above-mentioned solar system. The SEC plans to submit Wellesley's Green Communities application in Fall 2017.

**WasteWise Wellesley** - During the past year, the 3R (Reduce, Reuse, Recycle) Working Group (Department of Public Works, Natural Resources Commission (NRC) and SEC) launched WasteWise Wellesley, a Town-wide program designed to identify and capitalize on win-win opportunities associated with sustainable materials management (SMM). WasteWise's SMM goals are rooted in a systems-based approach to understanding GHG emissions associated with the production, consumption, and disposal of materials. The U.S. Environmental Protection Agency (EPA), for example, estimates that the provision of goods and food in the United States contributes approximately 42% of the country's carbon footprint. WasteWise Wellesley initiatives involve collaborations with Wellesley Public Schools (WPS), WPS Food Services, FMD, DPW, RDF, NRC, Green Schools, Sustainable Wellesley, EPA, and the Massachusetts Department of Environmental Protection (MADEP), and include:

- The launch of a cafeteria recycling and food waste diversion pilot at Bates Elementary School, with the roll-out of similar pilots underway at Fiske and Sprague Elementary Schools. The Bates pilot is diverting between 32% and 40% of previously landfill-bound waste to more productive endpoints and has the potential to divert more than 90%.
- Recovery of unused-cooked food from Wellesley Middle School with distribution to local food pantries.
- Distribution of a survey to Wellesley residents to gauge their interest in residential compost pick-up by a private vendor.
- Exploratory discussions about establishing a Repair Café in Wellesley.
- A collaboration involving the 3R Working Group, Food for Free, Harvard University, local colleges and school systems, MADEP, EPA, and Green Schools to explore the possible development of a food rescue program via which Food for Free would collect unused, cooked food from local educational institutions and distribute this food to people in need.

**Sustainable Building Guidelines and Hardy, Hunnewell, Upham (HHU)** - The SEC initiated discussions with the Permanent Building Committee (PBC) and FMD regarding development of Sustainable Building Guidelines for Wellesley. The SEC, PBC, and FMD toured Wellesley High School's sustainable features and took stock of lessons learned through the operation and maintenance of the new high school.

The SEC engaged with the HHU project. In a presentation to the HHU Committee in October, the SEC recommended that sustainability considerations become part of the HHU process moving forward. The SEC recommended a sustainability subcommittee, or similar body, to guide the adoption of sustainability goals and standards, and to hold the process accountable to these goals and standards. In May, leaders of Sustainable Wellesley asked the SEC to become more directly involved with the HHU process. The SEC worked with the School Committee to define the SEC's role: provide advice on sustainability-related topics and support outreach efforts with interested community members. At School Committee's request, the SEC developed an HHU Position Paper which contained specific recommendations for the Feasibility Study phase. The School Committee warmly received the SEC's input and the School Building Committee (SBC) incorporated the SEC's recommendations into the Feasibility Study's Scope of Work.

**900 Worcester** - The SEC Chair presented to the 900 Worcester Committee on energy issues related to the proposed facility. SEC members and staff met with Selectman David Murphy to discuss energy considerations relevant to the 900 Worcester project.

**Gas Leaks Forum** - The SEC was one of several co-sponsors of a Gas Leaks Forum on March 21. The Forum raised awareness about the more than 200 gas leaks in Wellesley, and their implications for safety, human health, the environment, and wasted resources.

**Solar for Non-profits** - The SEC worked with the MLP to create a standard legal framework for non-profits in Wellesley that wish to install solar panels to generate electricity. Temple Beth Elohim installed solar (37 kW) on January 6, 2017. Wellesley Friends Meeting House installed rooftop solar this past year. The installation of a solar system at Whole Foods (43 kW) is in progress. Wellesley Village Church is actively investigating rooftop solar as well. The MLP held initial discussions with the developer at 900 Worcester about the potential for the MLP to lease roof space on the rink/pool complex and to install solar panels which the MLP would own and operate.

**Streetlight Conversion** - The MLP received a DOER grant of \$281,000 to put toward the conversion of streetlights to LED. Wellesley residents will have the opportunity to see and comment on the proposed replacement fixtures prior to full installation. When fully installed, LED streetlights are projected to reduce the Town's electricity bill by \$100,000/year, as well as reduce the Town's carbon footprint.

**Power to Choose** - The SEC helped to establish a partnership between the Power to Choose (PTC) campaign, the MLP, and the Wellesley Education Foundation/Wellesley STEM Expo. The goal of this partnership was to raise awareness about Wellesley's voluntary renewable energy program and to promote understanding of renewable energy among Wellesley students and their parents. The Expo hosted exhibits on renewable energy and promoted the Sustainability Challenge, a contest designed to get kids learning and thinking creatively about renewable energy. As students explored renewable energy at the Expo and through the Challenge, parents learned about renewable energy benefits and about opportunities to purchase renewable energy through the Town's PTC Program.

**Green Power Community** - The Town of Wellesley has received the 2017 EPA Green Power Community designation. This designation is awarded based on the purchase of 5% of the Town's annual electricity consumption (for all Town departments and streetlights) from renewable energy and on the amount of electricity purchased from the Town-wide voluntary renewable energy program.